

CLAIMS

What is claimed is:

1. A method of limiting a number of retransmission attempts for a data transfer via a network interface controller (NIC), the method comprising the steps of:
 - storing a number of retransmission attempts for an error-including data transfer;
 - increasing the number of retransmission attempts by one each time a retransmission is attempted for the same error-including data transfer previously received;
 - and
 - allowing another retransmission attempt of the error-including data transfer in the case that the number of retransmission attempts does not exceed a maximum retransmission attempt number.
2. The method of claim 1, wherein the step of allowing includes dropping the data transfer and not confirming reception of the data transfer.
3. The method of claim 1, further comprising the steps of:
 - storing a largest sequence number among at least one previously received error-including data transfer and a newly received error-including data transfer; and
 - resetting the number of transmission attempts in the case that a newly received in-order data transfer has a sequence number greater than the stored largest sequence number.

4. The method of claim 3, wherein:

the newly received error-including data transfer is determined to have a sequence number greater than the largest sequence number by comparing the sequence number of the newly received error-including data transfer to the stored largest sequence number; and

the newly received in-order data transfer is determined to have a sequence number greater than the largest sequence number by comparing the sequence number of the newly received in-order data transfer to the stored largest sequence number.

5. The method of claim 1, wherein, in the case that the number of retransmission attempts exceeds the maximum retransmission attempt number, the method further comprises the step of placing the data transfer to a reassembly buffer of the NIC.

6. The method of claim 5, further comprising the step of sending an Ack for the data transfer.

7. The method of claim 5, further comprising the step of changing a type of the data transfer from a first type to a second type.

8. The method of claim 7, further comprising the step of changing the type of the data transfer from the second type to the first type where: the reassembly buffer is empty, the data transfer includes aligned DDP segment, and the data transfer was originated as a first type.

9. The method of claim 8, wherein the type of the data transfer determines whether the data transfer is placed to an internal buffer for direct data placement to a destination buffer or to the reassembly buffer.

10. A system for limiting a number of retransmission attempts for a data transfer via a network interface controller (NIC), the method comprising the steps of:

means for storing a number of retransmission attempts for an error-including data transfer;

means for increasing the number of retransmission attempts by one each time a retransmission is attempted for the same error-including data transfer previously received; and

means for allowing another transmission attempt of the error-including data transfer in the case that the number of retransmission attempts does not exceed a maximum retransmission attempt number.

11. The system of claim 10, wherein the means for allowing places the data transfer to a reassembly buffer of the NIC where the number of retransmission attempts exceeds the maximum retransmission attempt number.

12. The system of claim 10, further comprising:

means for storing a largest sequence number among at least one previously received error-including data transfer and a newly received error-including data transfer; and

means for resetting the number of transmission attempts in the case that the newly received error-including data transfer has a sequence number greater than the stored largest sequence number.

13. The system of claim 12, wherein

the newly received error-including data transfer is determined to have a sequence number greater than the stored largest sequence number by comparing the sequence number of the newly received error-including data transfer to the stored largest sequence number; and

the newly received in-order data transfer is determined to have a sequence number greater than the stored largest sequence number by comparing the sequence number of the newly received in-order data transfer to the stored largest sequence number.

14. The system of claim 10, further comprising means for changing a type of the data transfer from a first type to a second type.

15. The system of claim 14, further comprising means for changing changes the type of the data transfer from the second type to the first type where: a reassembly buffer of the NIC is empty, the data transfer includes aligned DDP segment, and the data transfer was originated as a first type.

16. The system of claim 15, wherein the type of the data transfer determines whether the data transfer is placed to an internal buffer for direct data placement to a destination buffer or to the reassembly buffer.

17. A computer program product comprising a computer useable medium having computer readable program code embodied therein for limiting a number of retransmission attempts for a data transfer via a network interface controller (NIC), the program product comprising:

program code configured to store a number of retransmission attempts for an error-including data transfer;

program code configured to increase the number of retransmission attempts by one each time a retransmission is attempted for the same error-including data transfer previously received; and

program code configured to allow another retransmission attempt of the error-including data transfer in the case that the number of retransmission attempts does not exceed a maximum retransmission attempt number.

18. The program product of claim 17, wherein the allowing program code places the data transfer to a reassembly buffer of the NIC where the number of retransmission attempts exceeds the maximum retransmission attempt number.

19. The program product of claim 17, further comprising:

program code configured to store a largest sequence number among at least one previously received error-including data transfer and a newly received error-including data transfer; and

program code configured to reset the number of transmission attempts in the case that the new in-order received data transfer has a sequence number greater than the stored

largest sequence number.

20. The program product of claim 19, wherein the newly received error-including data transfer is determined to have a sequence number greater than the largest sequence number by program code configured to compare the sequence number of the newly received error-including data transfer to the stored largest sequence number.